

FILE 'HOME' ENTERED AT 14:12:19 ON 28 SEP 2005

=> Index chemistry Dissabs

FILE 'ENCOMPLIT2' ACCESS NOT AUTHORIZED

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
0.21	0.21

FULL ESTIMATED COST

INDEX 'AGRICOLA, ALUMINIUM, ANABSTR, APOLLIT, AQUALINE, AQUIRE, BABS,  
BIOCOMMERCE, BIOTECHNO, CABA, CAOLD, CAPLUS, CBNB, CEABA-VTB, CEN, CERAB,  
CIN, COMPENDEX, CONFSCI, COPPERLIT, CORROSION, DISSABS, ENCOMPLIT,  
FEDRIP, GENBANK, INSPEC, INSPHYS, INVESTEXT, ...'

ENTERED AT 14:12:37 ON 28 SEP 2005

47 FILES IN THE FILE LIST IN STNINDEX

Enter SET DETAIL ON to see search term postings or to view  
search error messages that display as 0\* with SET DETAIL OFF.

=> s (apo?protein or apo?hemoglobin or apo?hemeoxygenase or apo?catalase or apo?cytochrome or  
apoferritin ) (P) (metal? (S) (rhodium or ruthenium or palladium)) and phosphino?  
0\* FILE AGRICOLA

=> s (apoprotein or apohemoglobin or apohemeoxygenase or apocatalase or apocytochrome or  
apoferritin ) (P) (metal? (S) (rhodium or ruthenium or palladium)) and phosphino?

0\* FILE ALUMINIUM  
0\* FILE APOLLIT  
0\* FILE AQUALINE  
0\* FILE BABS  
0\* FILE BIOCOMMERCE  
0\* FILE BIOTECHNO  
0\* FILE CAOLD  
1 FILE CAPLUS  
0\* FILE CBNB  
0\* FILE CEABA-VTB

14 FILES SEARCHED...

0\* FILE CIN  
0\* FILE COMPENDEX  
0\* FILE COPPERLIT  
0\* FILE CORROSION  
0\* FILE ENCOMPLIT  
0\* FILE FEDRIP  
0\* FILE INSPEC

26 FILES SEARCHED...

0\* FILE INSPHYS  
0\* FILE KOSMET  
0\* FILE METADEX  
0\* FILE NTIS  
0\* FILE PASCAL

37 FILES SEARCHED...

0\* FILE RAPRA  
0\* FILE WATER  
0\* FILE WELDASEARCH  
0\* FILE WSCA

1 FILES HAVE ONE OR MORE ANSWERS, 47 FILES SEARCHED IN STNINDEX

L1 QUE (APOPROTEIN OR APOHEMOGLOBIN OR APOHEMOXYGENASE OR APOCATALASE OR APO  
CYTOCHROME OR APOFERRITIN ) (P) (METAL? (S) (RHODIUM OR RUTHENIUM OR P  
ALLADIUM)) AND PHOSPHINO?

=>

=> d rank

F1 1 CAPLUS

=> s (apo?protein or apo?hemoglobin or apo?hemeoxygenase or apo?catalase or apo?cytochrome or  
apoferritin ) and (metal? (S) (rhodium or ruthenium or palladium)) and phosphino?  
0\* FILE AGRICOLA

=> s (apoprotein or apohemoglobin or apohemeoxygenase or apocatalase or apocytochrome or apoferritin ) and (metal? (S) (rhodium or ruthenium or palladium)) and phosphino?

8 FILES SEARCHED...

1 FILE CAPLUS

18 FILES SEARCHED...

0\* FILE FEDRIP

32 FILES SEARCHED...

39 FILES SEARCHED...

0\* FILE TULSA2

43 FILES SEARCHED...

1 FILES HAVE ONE OR MORE ANSWERS, 47 FILES SEARCHED IN STNINDEX

L2 QUE (APOPROTEIN OR APOHEMOGLOBIN OR APOHEMEOXYGENASE OR APOCATALASE OR APO CYTOCHROME OR APOFERRITIN ) AND (METAL? (S) (RHODIUM OR RUTHENIUM OR P ALLADIUM)) AND PHOSPHINO?

=> d rank

F1 1 CAPLUS

=> s l1

0\* FILE ALUMINIUM

0\* FILE APOLLIT

0\* FILE AQUALINE

0\* FILE BABS

0\* FILE BIOCOMMERCE

0\* FILE BIOTECHNO

0\* FILE CAOLD

1 FILE CAPLUS

0\* FILE CBNB

0\* FILE CEABA-VTB

14 FILES SEARCHED...

0\* FILE CIN

0\* FILE COMPENDEX

0\* FILE COPPERLIT

0\* FILE CORROSION

0\* FILE ENCOMPLIT

0\* FILE FEDRIP

0\* FILE INSPEC

0\* FILE INSPHYS

27 FILES SEARCHED...

0\* FILE KOSMET

0\* FILE METADEX

0\* FILE NTIS

0\* FILE PASCAL

37 FILES SEARCHED...

0\* FILE RAPRA

0\* FILE TULSA2

0\* FILE WATER

0\* FILE WELDASEARCH

0\* FILE WSCA

1 FILES HAVE ONE OR MORE ANSWERS, 47 FILES SEARCHED IN STNINDEX

L3 QUE L1

=> D l3 ibib abs

DISPLAY L# IS NOT VALID IN STNINDEX

Answer set was created in a file. Enter DISPLAY HISTORY to see where the answer set was created. Use the File command to change to that file, then display the answer.

=> s L2

1 FILE CAPLUS

14 FILES SEARCHED...

0\* FILE FEDRIP

26 FILES SEARCHED...

37 FILES SEARCHED...  
0\* FILE TULSA2

1 FILES HAVE ONE OR MORE ANSWERS, 47 FILES SEARCHED IN STNINDEX

L4 QUE L2

=> FIL F1

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

46.02

46.23

FILE 'CAPLUS' ENTERED AT 14:59:19 ON 28 SEP 2005  
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FILE COVERS 1907 - 28 Sep 2005 VOL 143 ISS 14

FILE LAST UPDATED: 27 Sep 2005 (20050927/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> S L2

6452 APOPROTEIN

2396 APOPROTEINS

7766 APOPROTEIN

(APOPROTEIN OR APOPROTEINS)

75 APOHEMOGLOBIN

4 APOHEMOGLOBINS

78 APOHEMOGLOBIN

(APOHEMOGLOBIN OR APOHEMOGLOBINS)

98 APOHB

27 APOHBS

106 APOHB

(APOHB OR APOHBS)

151 APOHEMOGLOBIN

(APOHEMOGLOBIN OR APOHB)

0 APOHEMEOXYGENASE

19 APOCATALASE

723 APOCYTOCHROME

48 APOCYTOCHROMES

746 APOCYTOCHROME

(APOCYTOCHROME OR APOCYTOCHROMES)

763 APOFERRITIN

235 APOFERRITINS

839 APOFERRITIN

(APOFERRITIN OR APOFERRITINS)

2328137 METAL?

66242 RHODIUM

31 RHODIUMS

66243 RHODIUM

(RHODIUM OR RHODIUMS)

86170 RUTHENIUM

20 RUTHENIUMS

86170 RUTHENIUM

(RUTHENIUM OR RUTHENIUMS)

151508 PALLADIUM

37 PALLADIUMS

151511 PALLADIUM

(PALLADIUM OR PALLADIUMS)

30055 METAL? (S) (RHODIUM OR RUTHENIUM OR PALLADIUM)

12189 PHOSPHINO?

L5 1 (APOPROTEIN OR APOHEMOGLOBIN OR APOHEMEOXYGENASE OR APOCATALASE  
OR APOCYTOCHROME OR APOFERRITIN ) AND (METAL? (S) (RHODIUM OR  
RUTHENIUM OR PALLADIUM)) AND PHOSPHINO?

=> d 15 ibib abs

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:185451 CAPLUS

DOCUMENT NUMBER: 142:276006

TITLE: Preparation of a metal complex-protein composite for  
the use as a hydrogenation catalyst of an olefin

INVENTOR(S): Watanabe, Yoshihito; Ueno, Takafumi; Abe, Satoshi

PATENT ASSIGNEE(S): Nagoya Industrial Science Research Institute, Japan

SOURCE: U.S. Pat. Appl. Publ., 7 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005049405	A1	20050303	US 2004-790060	20040302
JP 2005075799	A2	20050324	JP 2003-310085	20030902
PRIORITY APPLN. INFO.:			JP 2003-310085	A 20030902

OTHER SOURCE(S): MARPAT 142:276006

AB The metal complex-protein composite of the present invention includes a protein having a cavity and a metal complex and has a specific structure that the metal complex is received in the cavity of the protein. Here the metal complex is prepared by complexation of a metal ion, which is selected among the group consisting of rhodium, ruthenium, and palladium, with a ligand. The metal complex-protein composite of the invention functions as a hydrogenation catalyst of an olefin in water. The metal complex-protein composite is thus effectively applied to hydrogenation of water-soluble substrates and has environmental advantages over organic solvents. Preparation of rhodium complexes-apomyoglobin composites and their use as hydrogenation catalysts of olefins is disclosed.

=> s (apoprotein or apohemoglobin or apohemeoxygenase or apocatalase or apocytochrome or apoferritin ) (P) (rhodium or ruthenium or palladium)

6452 APOPROTEIN

2396 APOPROTEINS

7766 APOPROTEIN

(APOPROTEIN OR APOPROTEINS)

75 APOHEMOGLOBIN

4 APOHEMOGLOBINS

78 APOHEMOGLOBIN

(APOHEMOGLOBIN OR APOHEMOGLOBINS)

98 APOHB

27 APOHBS

106 APOHB

(APOHB OR APOHBS)

151 APOHEMOGLOBIN

(APOHEMOGLOBIN OR APOHB)

0 APOHEMEOXYGENASE

19 APOCATALASE

723 APOCYTOCHROME

48 APOCYTOCHROMES

746 APOCYTOCHROME

(APOCYTOCHROME OR APOCYTOCHROMES)

763 APOFERRITIN  
235 APOFERRITINS  
839 APOFERRITIN  
(APOFERRITIN OR APOFERRITINS)

66242 RHODIUM  
31 RHODIUMS  
66243 RHODIUM  
(RHODIUM OR RHODIUMS)

86170 RUTHENIUM  
20 RUTHENIUMS  
86170 RUTHENIUM  
(RUTHENIUM OR RUTHENIUMS)

151508 PALLADIUM  
37 PALLADIUMS  
151511 PALLADIUM  
(PALLADIUM OR PALLADIUMS)

L6 6 (APOPROTEIN OR APOHEMOGLOBIN OR APOHEMOXYGENASE OR APOCATALASE  
OR APOCYTOCHROME OR APOFERRITIN ) (P) (RHODIUM OR RUTHENIUM  
OR PALLADIUM)

=> dup rem l6  
PROCESSING COMPLETED FOR L6  
L7 6 DUP REM L6 (0 DUPLICATES REMOVED)

=> d l6 1-6 ibib abs

L6 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2005:185451 CAPLUS  
DOCUMENT NUMBER: 142:276006  
TITLE: Preparation of a metal complex-protein composite for  
the use as a hydrogenation catalyst of an olefin  
INVENTOR(S): Watanabe, Yoshihito; Ueno, Takafumi; Abe, Satoshi  
PATENT ASSIGNEE(S): Nagoya Industrial Science Research Institute, Japan  
SOURCE: U.S. Pat. Appl. Publ., 7 pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005049405	A1	20050303	US 2004-790060	20040302
JP 2005075799	A2	20050324	JP 2003-310085	20030902
PRIORITY APPLN. INFO.:			JP 2003-310085	A 20030902

OTHER SOURCE(S): MARPAT 142:276006

AB The metal complex-protein composite of the present invention includes a protein having a cavity and a metal complex and has a specific structure that the metal complex is received in the cavity of the protein. Here the metal complex is prepared by complexation of a metal ion, which is selected among the group consisting of rhodium, ruthenium, and palladium, with a ligand. The metal complex-protein composite of the invention functions as a hydrogenation catalyst of an olefin in water. The metal complex-protein composite is thus effectively applied to hydrogenation of water-soluble substrates and has environmental advantages over organic solvents. Preparation of rhodium complexes-apomyoglobin composites and their use as hydrogenation catalysts of olefins is disclosed.

L6 ANSWER 2 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:511089 CAPLUS  
DOCUMENT NUMBER: 141:253890  
TITLE: Interaction of an anticancer ruthenium complex  
HInd[RuInd2Cl4] with cytochrome c  
AUTHOR(S): Trynda-Lemiesz, Lilianna  
CORPORATE SOURCE: Faculty of Chemistry, University of Wroclaw, Wroclaw,  
50-383, Pol.  
SOURCE: Acta Biochimica Polonica (2004), 51(1), 199-205  
CODEN: ABPLAF; ISSN: 0001-527X  
PUBLISHER: Polish Biochemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Cytochrome c is an important electron transfer protein in the respiratory chain, shuttling electrons from cytochrome c reductase to cytochrome c oxidase. Extensive chemical modification studies indicate significant electrostatic interactions between these proteins and show that all structural and conformational changes of cytochrome c can influence the electron transport. In the present work we examine the effect of an anticancer **ruthenium** complex, trans-Indazolium (bisindazole) tetrachlororuthenate(III) (HInd[RuInd2Cl4]), on the conformation of cytochrome c, the state of the heme moiety, formation of the protein dimer and on the folding state of **apocytochrome c**. For this purpose, gel-filtration chromatog., absorption second derivative spectroscopy, CD and inductively coupled plasma atomic emission spectroscopy (ICP(AES)) were used. The present data have revealed that binding of the potential anticancer drug HInd[RuInd2Cl4] complex to cytochrome c induces a conformation of the protein with less organized secondary and tertiary structure.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L6 ANSWER 3 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2004:225986 CAPLUS

TITLE: Photoinduced long-range electron transfer of ruthenium-modified hemoglobin I (HbI) from *Lucina pectinata*

AUTHOR(S): Rivera, Eladio J.; Colon, Jorge L.

CORPORATE SOURCE: Department of Chemistry, University of Puerto Rico, Rio Piedras, 00931, P. R.

SOURCE: Abstracts of Papers, 227th ACS National Meeting, Anaheim, CA, United States, March 28-April 1, 2004 (2004), INOR-650. American Chemical Society: Washington, D. C.  
CODEN: 69FGKM

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB The objective of this work is to prepare an appropriate donor-acceptor system to investigate intramol. long-range electron transfer (ET) in Hb I (HbI) of the tropical clam *Lucina pectinata*. The approach that has been taken in this work is to covalently attach a redox-active **ruthenium** complex to the surface histidine (His36) of HbI. Since this surface is not solvent accessible in met-HbI at neutral pH, His36 of **apoHb I** (apo-HbI) of *Lucina pectinata* was modified with Ru(bpy)<sub>2</sub>CO<sub>3</sub> at pH 2, 4, 5 and 7. Apo-HbI was prepared using Teale's method. Modification expts. were monitored using UV-Vis spectrophotometry by comparing the absorbance ratio at 292 nm and 486 nm. Modified apo-HbI was reconstituted with hemin to produce modified met-HbI. The modified met-HbI was purified using ion-exchange chromatog. on a Fast Protein Liquid Chromatog. (FPLC) setup. Intramol. long-range ET from the Ru(bpy)<sub>2</sub>(i.m.) (His36)-excited state to the heme ferric iron in HbI was monitored by luminescence lifetime measurements. The results of these investigations will be presented.

L6 ANSWER 4 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 2000:331293 CAPLUS

TITLE: Placement of Ru(BPY)<sub>2</sub><sup>2+</sup> in the heme pocket of cytochrome b5.

AUTHOR(S): Jackson, Tracey S.; Avila, Ludivina; Rivera, Mario; Durham, Bill; Millett, Frank

CORPORATE SOURCE: Department of Chemistry and Biochemistry, University of Arkansas, Fayetteville, AR, 72701, USA

SOURCE: Book of Abstracts, 219th ACS National Meeting, San Francisco, CA, March 26-30, 2000 (2000), INOR-510. American Chemical Society: Washington, D. C.  
CODEN: 69CLAC

DOCUMENT TYPE: Conference; Meeting Abstract

LANGUAGE: English

AB Expts. have shown that outer mitochondrial membrane cytochrome b5 (1B5M) can accept a **ruthenium** complex as its prosthetic group. The 1B5M cytochrome contains only four histidines. To prevent the possibility

of multiple products upon reaction of the protein with the **ruthenium** complex, the two histidines not involved in prosthetic binding were replaced with tyrosines through site directed mutagenesis. The resultant cytochrome (HTM1) contains only histidines 39 and 63. The **apoprotein** of HTM1 was prepared by 2-butanone extraction, and the trans-[Ru(bpy)<sub>2</sub>(OH)<sub>2</sub>](CF<sub>3</sub>SO<sub>3</sub>)<sub>2</sub> was prepared by a 7 h photolysis of cis-Ru(bpy)<sub>2</sub>CO<sub>3</sub> in 1 M CF<sub>3</sub>SO<sub>3</sub>H. The **apoprotein** and **ruthenium** complex were subsequently reacted for 15 h at 37°C under dark anaerobic conditions in the presence of 80% ethylene glycol. This presentation will focus on characterization of the new cytochrome.

L6 ANSWER 5 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1994:453401 CAPLUS  
 DOCUMENT NUMBER: 121:53401  
 TITLE: Site-Specific Hydrolytic Cleavage of Cytochrome c and of Its Heme Undecapeptide, Promoted by Coordination Complexes of Palladium(II)  
 AUTHOR(S): Zhu, Longgen; Qin, Ling; Parac, Tatjana N.; Kostic, Nenad M.  
 CORPORATE SOURCE: Department of Chemistry, Iowa State University, Ames, IA, 50011, USA  
 SOURCE: Journal of the American Chemical Society (1994), 116(12), 5218-24  
 CODEN: JACSAT; ISSN: 0002-7863  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Cytochrome c is specifically cleaved at the amide bond His18-Thr19 in the presence of an equimolar amount or a small excess of the simple **palladium(II)** complexes [Pd(H<sub>2</sub>O)<sub>3</sub>(OH)]<sup>+</sup>, cis-[Pd(en)(H<sub>2</sub>O)<sub>2</sub>]<sub>2</sub><sup>+</sup>, cis-[Pd(dtco)(H<sub>2</sub>O)<sub>2</sub>]<sub>2</sub><sup>+</sup>, and cis-[Pd(dtco-OH)(H<sub>2</sub>O)<sub>2</sub>]<sub>2</sub><sup>+</sup>; where dtco is 1,5-dithiacyclooctane and dtco-OH is its 3-hydroxo derivative. Incubation for 2 days at pH 1.7 and 40 °C gives the cleavage yield as high as 80%. A noncoordinating acid is required to bring cytochrome c into the partially unfolded state II. The cleavage site, between His18 and Thr19, is confirmed in expts. with the aforementioned complexes and with the fragment containing residues 11-21 and the heme. Cytochrome c and **apocytochrome c** give identical electrophoretograms upon cleavage; evidently, heme does not affect the site and the efficiency of cleavage. Although **palladium(II)** can initially bind to various side chains in the protein, only binding to Cys17 (a thio ether) results in cleavage. The tripeptides AcCys-His-Ala and AcCysMe-His-Gly mimic the important features of the reactive segment Cys17-His18-Thr19 in the protein. Indeed, the **palladium(II)** complexes promote selective cleavage of the His-Ala and His-Gly bonds in the resp. tripeptides, and kinetics of the cleavage of the former tripeptide is reported. This specificity probably is caused by tridentate coordination of the Cys17-His18 fragment to **palladium(II)** and by the proximity of the imidazolium group to the scissile bond. The notion of tridentate coordination is supported by IR and 1H NMR spectra of binary complexes obtained in the reaction between AcCys-His-Ala and **palladium(II)** complexes. The tripeptide AcCysMe-Ala-Gln mimics the important features of the unreactive segment Cys14-Ala15-Gln16 in the protein, which lacks the special histidine residue (i.e., the imidazolium group). Indeed, cis-[Pd(en)(H<sub>2</sub>O)<sub>2</sub>]<sub>2</sub><sup>+</sup> cleaves the CysMe-Ala bond in this synthetic tripeptide. Stereochem. and mechanistic aspects of cleavage are discussed. To the authors' knowledge, this is the first example of selective hydrolytic cleavage of a protein effected by a metal complex that is directly attached, not tethered, to the protein.

L6 ANSWER 6 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN

ACCESSION NUMBER: 1987:49841 CAPLUS  
 DOCUMENT NUMBER: 106:49841  
 TITLE: Syntheses of derivatives of protoporphyrin IX bearing deuteriated methyls on the propionate (C and D) rings  
 AUTHOR(S): Smith, Kevin M.; Miura, Michiko; Morris, Ian K.  
 CORPORATE SOURCE: Dep. Chem., Univ. California, Davis, CA, 95616, USA  
 SOURCE: Journal of Organic Chemistry (1986), 51(24), 4660-7  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DOCUMENT TYPE: Journal

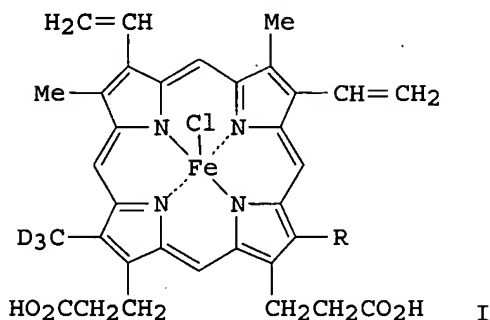
LANGUAGE:

English

OTHER SOURCE(S):

CASREACT 106:49841

GI



AB I (R = Me, CD<sub>3</sub>) were prepared I (R = CD<sub>3</sub>) was obtained via an acrylate by conversion of deuteroporphyrin IX di-Me ester into the corresponding bis(acrylate) using LiN(CHMe<sub>2</sub>)<sub>2</sub>, PhSeBr, and oxidative elimination. After base-catalyzed D exchange, reduction of the acrylate to propionate, and vinylation, the required 5,8-dilabeled porphyrin was obtained. I (R = Me) was obtained by total synthesis through a porphyrin with an unsubstituted 7-position. By a mercuriation/**palladium**-olefin reaction, the vacant position was substituted with an acrylate and, following base-catalyzed exchange, hydrogenation, and construction of the 2- and 4-vinyls, the required product was obtained. I are of interest in connection with heme-**apoprotein** reconstitution studies and for characterization of structure/function relationships in heme proteins.

=>



## WEST Search History





DATE: Wednesday, September 28, 2005

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
		<i>DB=PGPB,USPT,USOC; THES=ASSIGNEE; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L6	(apo\$1protein apo\$1myoglobin apo\$1hemoglobin apo\$1hemeoxygenase apo\$1catalase apo\$1cytochrome apo\$1ferritin) same (rhodium ruthenium palladium)	5
<input type="checkbox"/>	L5	(apo\$1protein apo\$1myoglobin apo\$1hemoglobin apo\$1hemeoxygenase apo\$1catalase apo\$1cytochrome apo\$1ferritin) and(rhodium ruthenium palladium)	145
<input type="checkbox"/>	L4	(apo\$1protein apo\$1myoglobin apo\$1hemoglobin apo\$1hemeoxygenase apo\$1catalase apo\$1cytochrome apo\$1ferritin) and(rhodium ruthenium palladium) and phosphino\$	2
<input type="checkbox"/>	L3	(apo\$1protein apo\$1myoglobin apo\$1hemoglobin apo\$1hemeoxygenase apo\$1catalase apo\$1cytochrome apo\$1ferritin) and(metal same (rhodium ruthenium palladium)) and phosphino\$	2
<input type="checkbox"/>	L2	(apo\$1protein apo\$1myoglobin apo\$1hemoglobin apo\$1hemeoxygenase apo\$1catalase apo\$1cytochrome apo\$1ferritin) and(metal same (rhodium ruthenium palladium)) and phosphino\$	2
<input type="checkbox"/>	L1	(apoprotein apohemoglobin apohemeoxygenase apocatalase apocytochrome apoferritin) same (metal same (rhodium ruthenium palladium)) and phosphino\$	0

END OF SEARCH HISTORY